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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,254	01/16/2002	Matthew B. Shoemake	TI-32506	7684
7590	06/21/2006		EXAMINER	
<b>J. Dennis Moore</b> Texas Instruments Incorporated P.O. Box 655474, M/S 3999 Dallas, TX 75265				LEE, ANDREW CHUNG CHEUNG
				ART UNIT
				PAPER NUMBER
				2616

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/051,254	SHOEMAKE, MATTHEW B.
	Examiner	Art Unit
	Andrew C. Lee	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 March 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10, 14-17 and 21-23 is/are rejected.
- 7) Claim(s) 11-13 and 18-20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 9, 16, 10, 17, 14, 21, 15, 23 are rejected under 35 U.S.C. 103(e) as being unpatentable over Hub et al. (Pub No. US 2002/0036994 A1) in view of Miyoshi et al. (US 6738646 B2).

Regarding claim 1, Hub et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4), comprising: providing a plurality of transmit parameter pairs that each include information indicative of a data rate and information indicative of a power level (recited “Table 1 illustrates a C/I table satisfying a receiving error rate at each data rate” as a plurality of transmit parameter pairs that each include information indicative of a data rate and information indicative of a power level (C/I as power level); page 2, column 1, paragraphs [0014], lines 1 – 6; [0015] lines 1 – 6); transmitting at the data rate and power level indicated by a selected one of the transmit parameter pairs (recited “selecting a data rate corresponding to the reference C/I value from the C/I table”)

as transmitting at the data rate and power level indicated by a selected one of the transmit parameter pairs; page 4, column 2, paragraph [0050]); and Hub et al. also teach searching the C/I table for the largest one of the C/I thresholds that is smaller than the received C/I value, and defines this value as a reference value (see page 4, column 2, paragraph [005]). However, Hub et al. do not disclose explicitly sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair, including determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the currently selected transmit parameter pair and a communication quality condition associated with the communication channel. Miyoshi et al. disclose the limitation of sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair (Fig. 10, elements ST901, ST902 (DRC Value -6 and reduce transmission power 15 dB below normal), ST903, ST904 (DRC Value -5 –plus, reduce transmission power 10 dB below normal) as sequentially selecting different ones of the transmit parameter pairs), including determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the currently selected transmit parameter pair and a communication quality condition associated with the communication channel (Fig. 10, column 17, lines 18 – 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. to include sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair, including determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the currently selected transmit parameter pair and a communication quality condition associated with the communication channel such as that taught by Miyoshi et al. in order to provide base station apparatus set the transmission rate of a

communication terminal apparatus based on the reception quality of that communication terminal apparatus (as suggested by Miyoshi et al. , see column 2, lines 48 – 51).

Regarding claim 6, Hub et al. disclose the limitation of the method of claimed wherein the communication channel is a wireless communication channel (recited “a radio link” as communication channel is a wireless communication channel; page 3, column 1, paragraph [0036], lines 2 – 4).

Regarding claims 9, 16, Hub et al. disclose the limitation of the method and apparatus of claimed wherein the providing step includes providing an ordered list of the plurality of transmit parameter pairs (recited “Table 1, C/I table” as includes providing an ordered list of the plurality of transmit parameter pairs (data rate, C/I threshold (dB) as transmit parameter pairs); page 2, column 1, paragraphs [0014], [0015]).

Regarding claims 10, 17, Hub et al. disclose the limitation of the method and apparatus of claimed wherein the ordered list orders the data rate for a first group of the transmit parameter pairs from lowest to highest (recited Table 1, (data rate =38.4 Kbps) as data rate is lowest and (data rate= 2.4 Mbps as data rate to highest, page 2, column 1, paragraph [0014])), Hub et al. do not disclose explicitly the data rate for each of the transmit parameter pairs of the first group paired with a common maximum power level. Miyoshi et al. disclose the limitation of the data rate for each of the transmit parameter pairs of the first group paired with a common maximum power level (Fig. 8, elements BPSK (1) with power normal as first group paired with a common

maximum power level; column 13, lines 18 – 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. to include the data rate for each of the transmit parameter pairs of the first group paired with a common maximum power level such as that taught by Miyoshi et al. in order to provide base station apparatus set the transmission rate of a communication terminal apparatus based on the reception quality of that communication terminal apparatus (as suggested by Miyoshi et al., see column 2, lines 48 – 51).

Regarding claims 14, 21, Hub et al. disclose the limitation of the method and apparatus of claimed wherein the determining step includes evaluating the communication quality condition based on the currently selected transmit parameter pair (recited “reduction in surplus transmission power contributions to decreasing interference to other sectors and other signals” as includes evaluating the communication quality condition based on the currently selected transmit parameter pair; page 5, column 2, paragraph [0062]).

Regarding claims 15, 23, Hub et al. disclose the limitation of an apparatus for jointly controlling the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4), comprising: a storage portion for storing a plurality of transmit parameter pairs that each include information indicative of a data rate and information indicative of a power level, said storage portion having an output for outputting a selected one of the transmit parameter pairs (recited “the receiver includes a C/I table for storing a C/I threshold satisfying a

specific packet error probability at every data rate” as a storage portion for storing a plurality of transmit parameter pairs; page 1, paragraph [0012]); a communication interface (recited first multiplexer 131” as communication interface) coupled to said storage portion output for transmitting at the data rate and power level indicated by the selected transmit parameter pair (recited “selecting a data rate corresponding to the reference C/I value from the C/I table” as transmitting at the data rate and power level indicated by a selected one of the transmit parameter pairs; page 4, column 2, paragraph [0045 ], [0050]); and Hub et al. also teach searching the C/I table for the largest one of the C/I thresholds that is smaller than the received C/I value, and defines this value as a reference value (see page 4, column 2, paragraph [005]). Hub et al. do not disclose explicitly a controller coupled to said storage portion for sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair that is output from said storage portion, said controller including an input for receiving information indicative of a communication quality condition associated with the communication channel, and said controller operable for determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the communication quality condition and the currently selected transmit parameter pair. Miyoshi et al. disclose the limitation of a controller (recited “power setting section” as controller; Fig. 7) coupled to said storage portion for sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair that is output from said storage portion (recited “DRC table” as storage portion for sequentially selecting different ones of the transmit parameter pairs; Fig. 8, column 13, lines 13 – 24), said controller including an input for receiving information indicative of a communication quality condition associated with the communication channel, and said controller operable for determining which of the

transmit parameter pairs will be the next selected transmit parameter pair based on the communication quality condition and the currently selected transmit parameter pair (column 12, lines 21 – 33; Fig. 10, column 17, lines 18 – 61; column 29, lines 49 – 66; column 30, lines 1 – 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. to include a controller coupled to said storage portion for sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair that is output from said storage portion, said controller including an input for receiving information indicative of a communication quality condition associated with the communication channel, and said controller operable for determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the communication quality condition and the currently selected transmit parameter pair such as that taught by Miyoshi et al. in order to provide base station apparatus set the transmission rate of a communication terminal apparatus based on the reception quality of that communication terminal apparatus (as suggested by Miyoshi et al., see column 2, lines 48 – 51).

3. Claims 2, 3, 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hub et al. (Pub No. US 2002/0036994 A1) and Miyoshi et al. (US 6738646 B2) as applied to claims 1, 6, 9, 16, 10, 17, 14, 21, 15, 23, above, and further in view of Gesbert et al. (US 6760882 B1).

Regarding claim 2, Hub et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling

the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4). However, Hub et al. and Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a signal to noise ratio. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a signal to noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, element “SNR”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. and Miyoshi et al. to include the method of claimed wherein the communication quality condition includes a signal to noise ratio such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 3, Hub et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4). However, Hub et al. and Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a signal to interference noise ratio. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a signal to interference noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, element “SINR”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. and Miyoshi et al. to include the method

of claimed wherein the communication quality condition includes a signal to interference noise ratio such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 4, Hub et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4). However, Hub et al. and Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a packet error rate. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a packet error rate (column 5, lines 42 – 53; column 14, lines 32 – 35, element “PER”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. and Miyoshi et al. to include the method of claimed wherein the communication quality condition includes a packet error rate such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 5, Hub et al. disclose the limitation of a method for jointly controlling

the data rate and power level of data transmission across a communication channel (recited “determining a forward data rate and a forward transmission power level” as jointly controlling the data rate and power level of data transmission; page 2, column 1, paragraph [0020], lines 2 – 4). However, Hub et al. and Miyoshi et al. do not disclose expressly the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio. Gesbert et al. disclose the limitation of the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, elements “SNR and SINR”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al. and Miyoshi et al. to include the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio such as that taught Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

4. Claims 7, 8, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hub et al. (Pub No. US 2002/0036994 A1) and Miyoshi et al. (US 6738646 B2) and Gesbert et al. (US 6760882 B1) as applied to claims 1, 6, 9, 16, 10, 17, 14, 21, 15, 23, 2, 3, 4, 5 above, and further in view of Darabi et al. (US 6970681 B2).

Regarding claim 7, Hub et al., Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the method of claimed wherein the communication channel is a Bluetooth

communication channel. Darabi et al. disclose the limitation of the method of claimed wherein the communication channel is a Bluetooth communication channel (column 1, lines 59 – 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Hub et al., Miyoshi et al. and Gesbert et al. to include a method of claimed wherein the communication channel is a Bluetooth communication channel such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

Regarding claim 8, Hub et al., Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the method of claimed wherein the communication channel is an IEEE 802.11b communication channel. Darabi et al. disclose the limitation of the method of claimed wherein the communication channel is an IEEE 802.11b communication channel (column 2, lines 3 – 17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hub et al., Miyoshi et al. and Gesbert et al. to include the method of claimed wherein the communication channel is an IEEE 802.11b communication channel such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

Regarding claim 22, Hub et al., Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b

transmitter. Darabi et al. disclose the limitation of the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b transmitter (column 2, lines 3 – 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Hub et al., Miyoshi et al. and Gesbert et al. to include the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b transmitter such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

*Allowable Subject Matter*

5. Claims 11, 12, 13, 18, 19, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Response to Arguments*

6. Applicant's arguments filed on 03/24/2006 with respect to claims 1 – 23 have been fully considered but they are not persuasive.

*Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

Art Unit: 2616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACL

June 15, 2006



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SUPERVISORY PATENT EXAMINER